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This application claims the benefit of U.S. Provisional Application No.60/147,129, filed on August 4, 1999; and this application is a continuation-in-part of U.S. Application No. 09/525,615, filed on March 14, 2000; and this application is a continuation-in-part of U.S. Application No. 09/526,041, filed on March 14, 2000, all of which are incorporated herein by reference in their entireties.

In the Claims:

Please cancel claims 4-5,10-12, 38, and 40.

Please amend claims 13, 32, and 39 as follows:

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13. (Once Amended) The apparatus of claim 7, wherein said first and said second universal frequency down-conversion modules each comprise a switch and a storage element.

32. (Once Amended) A method of transmitting a baseband signal over a wireless LAN, comprising the steps of:

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(1) spreading the baseband signal using a spreading code, resulting in a spread baseband signal; and

(2) differentially sampling the spread baseband signal according to a first control signal and a second control signal resulting in a plurality of harmonic images that are each representative of the baseband signal, wherein said first and second control signals have pulse widths.

39. (Once Amended) In a wireless LAN device, a method of down-converting a received RF signal, comprising the steps of:

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down-converting said received RF signal according to a first control signal and a second control signal, resulting in a down-converted signal, wherein said second control signal is delayed relative to said first control signal by $.5 + n$ cycles of said received RF signal, wherein n may be any integer greater than or equal to 1;

de-spreading said down-converted signal using a spreading code, resulting in a de-spread signal; and

de-modulating said de-spread signal, resulting in a de-modulated signal;

wherein said first and said second control signals each comprise a train of pulses having pulse widths.
